

Amendment and Response

Page 2 of 13

Serial No.: 10/620.548

Confirmation No.: 8448

Filed: 16 July 2003

For: DELIVERY OF HYDROGEL COMPOSITIONS AS A FINE MIST

Amendments to the Claims

This listing of claims replaces all prior versions, and listings, of claims in the above-identified application:

1. **(Currently Amended)** A spray device comprising:

a container;

an aqueous dental composition in the container, the composition comprising about 10% by weight to about 50% by weight of a thermally responsive viscosity modifier based on the total weight of the composition, and water, wherein the composition is in a low viscosity state at a pre-treatment temperature and a highly viscous state at a treatment temperature that is higher than the pre-treatment temperature; and

a sprayer in fluid communication with the dental composition, the device being capable of spraying the dental composition as a fine mist into the oral environment, wherein the viscosity of the composition at the treatment temperature is at least about 10 times the viscosity of the composition at the pre-treatment temperature.

2. **(Currently Amended)** The device of claim 1 ~~[[19]]~~ wherein the device further comprises a propellant.

3. **(Currently Amended)** A fine mist of a dental composition in the oral environment, the composition comprising about 10% by weight to about 50% by weight of a thermally responsive viscosity modifier based on the total weight of the composition, and water, wherein the composition is in a low viscosity state at a pre-treatment temperature and a highly viscous state at a treatment temperature that is higher than the pre-treatment temperature, and wherein the viscosity of the composition at the treatment temperature is at least about 10 times the viscosity of the composition at the pre-treatment temperature.

Amendment and Response

Page 3 of 13

Serial No.: 10/620,548

Confirmation No.: 8448

Filed: 16 July 2003

For: DELIVERY OF HYDROGEL COMPOSITIONS AS A FINE MIST

4. **(Currently Amended)** A dental composition capable of being sprayed as a fine mist into the oral environment, the composition comprising:

about 10% by weight to about 50% by weight of a thermally responsive viscosity modifier based on the total weight of the composition;

water; and

a propellant,

wherein the composition is in a low viscosity state at a pre-treatment temperature and a highly viscous state at a treatment temperature that is higher than the pre-treatment temperature, and wherein the viscosity of the composition at the treatment temperature is at least about 10 times the viscosity of the composition at the pre-treatment temperature.

5. **(New)** The dental composition of claim 4 wherein the pre-treatment temperature is at most about room temperature.

6. **(New)** The dental composition of claim 4 wherein the treatment temperature is about body temperature.

7. **(New)** The dental composition of claim 4 wherein the thermally responsive viscosity modifier is a polyoxyalkylene polymer.

8. **(New)** The dental composition of claim 4 wherein the viscosity of the composition at the treatment temperature is about 10 times to about 100 times the viscosity of the composition at the pre-treatment temperature.

9. **(New)** The dental composition of claim 4 wherein the dental composition comprises about 17% by weight to about 40% by weight of a thermally responsive viscosity modifier.

Amendment and Response

Page 4 of 13

Serial No.: 10/620,548

Confirmation No.: 8448

Filed: 16 July 2003

For: DELIVERY OF HYDROGEL COMPOSITIONS AS A FINE MIST

10. (New) The dental composition of claim 4 wherein the aqueous composition further comprises a salt.
11. (New) The dental composition of claim 4 wherein the composition further comprises an adjuvant.
12. (New) The dental composition of claim 11 wherein the adjuvant is selected from the group consisting of acids, peroxides, fluoride sources, medicaments, stability promoters, acid neutralizers, preservatives, adhesive modifiers, fillers, dyes, flavorings, sweeteners, and breath fresheners.
13. (New) The dental composition of claim 11 wherein the adjuvant is selected from the group consisting of anti-microbial agents, anti-calculus agents, anti-fungal agents, cariostatic agents, local anesthetics, enzymes, and sodium bicarbonate.
14. (New) A spray device comprising:
a container;
an aqueous dental composition in the container, the composition comprising:
about 10% by weight to about 50% by weight of a thermally responsive
viscosity modifier based on the total weight of the composition;
an adjuvant selected from the group consisting of acids, peroxides,
fluoride sources, medicaments, stability promoters, acid
neutralizers, preservatives, adhesive modifiers, fillers, dyes,
flavorings, sweeteners, and breath fresheners; and
water; wherein the composition is in a low viscosity state at a pre-

Amendment and Response

Page 5 of 13

Serial No.: 10/620,548

Confirmation No.: 8448

Filed: 16 July 2003

For: DELIVERY OF HYDROGEL COMPOSITIONS AS A FINE MIST

treatment temperature and a highly viscous state at a treatment temperature that is higher than the pre-treatment temperature; and a sprayer in fluid communication with the dental composition, the device being capable of spraying the dental composition as a fine mist into the oral environment.

15. (New) A spray device comprising:

a container;

an aqueous dental composition in the container, the composition comprising:

about 10% by weight to about 50% by weight of a thermally responsive viscosity modifier based on the total weight of the composition;

an adjuvant selected from the group consisting of anti-microbial agents, anti-calculus agents, anti-fungal agents, cariostatic agents, local anesthetics, glucose oxidases, lactoperoxidases, and sodium bicarbonate; and

water; wherein the composition is in a low viscosity state at a pre-treatment temperature and a highly viscous state at a treatment temperature that is higher than the pre-treatment temperature; and

a sprayer in fluid communication with the dental composition, the device being capable of spraying the dental composition as a fine mist into the oral environment.

16. (New) A fine mist of a dental composition in the oral environment, the composition comprising:

about 10% by weight to about 50% by weight of a thermally responsive viscosity modifier based on the total weight of the composition;

Amendment and Response

Page 6 of 13

Serial No.: 10/620,548

Confirmation No.: 8448

Filed: 16 July 2003

For: DELIVERY OF HYDROGEL COMPOSITIONS AS A FINE MIST

an adjuvant selected from the group consisting of acids, peroxides, fluoride sources, medicaments, stability promoters, acid neutralizers, preservatives, adhesive modifiers, fillers, dyes, flavorings, sweeteners, and breath fresheners; and

water, wherein the composition is in a low viscosity state at a pre-treatment temperature and a highly viscous state at a treatment temperature that is higher than the pre-treatment temperature.

17. (New) A fine mist of a dental composition in the oral environment, the composition comprising:

about 10% by weight to about 50% by weight of a thermally responsive viscosity modifier based on the total weight of the composition;

an adjuvant selected from the group consisting of anti-microbial agents, anti-calculus agents, anti-fungal agents, cariostatic agents, local anesthetics, glucose oxidases, lactoperoxidases, and sodium bicarbonate; and

water, wherein the composition is in a low viscosity state at a pre-treatment temperature and a highly viscous state at a treatment temperature that is higher than the pre-treatment temperature.

18. (New) A dental composition capable of being sprayed as a fine mist into the oral environment, the composition comprising:

about 10% by weight to about 50% by weight of a thermally responsive viscosity modifier based on the total weight of the composition;

water;

an adjuvant selected from the group consisting of acids, peroxides, fluoride sources, medicaments, stability promoters, acid neutralizers, preservatives, adhesive modifiers, fillers, dyes, flavorings, sweeteners, and breath fresheners; and

Amendment and Response

Page 7 of 13

Serial No.: 10/620,548

Confirmation No.: 8448

Filed: 16 July 2003

For: DELIVERY OF HYDROGEL COMPOSITIONS AS A FINE MIST

a propellant, wherein the composition is in a low viscosity state at a pre-treatment temperature and a highly viscous state at a treatment temperature that is higher than the pre-treatment temperature.

19. (New) A dental composition capable of being sprayed as a fine mist into the oral environment, the composition comprising:

about 10% by weight to about 50% by weight of a thermally responsive viscosity modifier based on the total weight of the composition;

water;

an adjuvant selected from the group consisting of anti-microbial agents, anti-calculus agents, anti-fungal agents, cariostatic agents, local anesthetics, glucose oxidases, lactoperoxidases, and sodium bicarbonate; and

a propellant, wherein the composition is in a low viscosity state at a pre-treatment temperature and a highly viscous state at a treatment temperature that is higher than the pre-treatment temperature.